REMARKS

Upon entry of the instant amendment, claims 1, and 3-24 will remain pending in the above-identified application and stand ready for further action on the merits.

In this Amendment, claim 1 has been amended to recite limitations previously recited in claim 2 (*and claim 2 has been canceled to prevent a redundancy with amended claims*). Claim 23 also has been amended so as to depend from claim 15 or 16 and to recite limitations found in claim 10, so as to thereby help clarify the instant invention being claimed.

Accordingly, the present amendments to the claims do not introduce new matter into the application as originally filed. As such entry of the instant amendment and favorable action on the merits is earnestly solicited at present.

Claim Rejections under 35 U.S.C. § 112 (Second Paragraph)

Claim 23 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have herewith amended claim 23, and submit that claim 23 as instantly amended is fully acceptable under the provisions of 35 U.S.C. 112, second paragraph. In this regard, as stated in M.P.E.P. §§ 2173.01 and 2173.02 :

> *A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. See MPEP § 2111.01. Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is*

sought. As noted by the court in In re Swinehart, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.

The examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement.

Accordingly, reconsideration and withdraw of the outstanding rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested at present.

Claim Rejections under 35 U.S.C. §§ 102(b) and 103(a)

Claims 1 and 3-24 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over **Nakacho et al.** (WO 00/09518; which corresponds to US 6,528,559).

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over **Nakacho et al.** as applied to claim 1, and further in view of **Harashina et al.** (WO 03/046085; which corresponds to US 2005/0004292).

Reconsideration and withdraw of each of the above rejections is respectfully requested based on the following considerations.

Legal Standard for Determining Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

MPEP § 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

(a) determining the scope and content of the prior art;

(b) ascertaining the differences between the prior art and the claims in issue;

(c) resolving the level of ordinary skill in the pertinent art; and

(d) evaluating any evidence of secondary considerations.

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP § 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

(a) *combining prior art elements according to known methods to yield predictable results;*

(b) *simple substitution of one known element for another to obtain predictable results;*

(c) *use of known technique to improve similar devices (methods, or products) in the same way;*

(d) *applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;*

(e) *"obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success*

(f) *known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;*

(g) *some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.*

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. *See* MPEP § 2143.03.

Distinctions Over the Cited Art

1.) Distinctions Over Nakacho et al. (WO 00/09518)

The present invention relates to a flame retardant composition comprising a specific metal oxide (A-1) or a trivalent phosphorous compound (A-2) and a specific phosphazene compound (B) at a specific ratio of these components. This constitution can impart excellent properties on the flame retardant composition such as a stable flame retardance as described in paragraph [0010] of the present specification *(which is reproduced immediately below for the Examiner's convenience).*

> *As a result of intensive research conducted by the inventors in an attempt to solve the above problems, it has been found that by using a flame retardant composition comprising (A) at least one compound selected from the group consisting of (A-1) a metal oxide having a specific metal element and (A-2) a trivalent phosphorus compound, (B) a specific phosphazene compound and, if necessary, (C) an aromatic resin, formation of a carbonized film on the surface of resin can be accelerated and a stable flame retardance can be imparted to resin on which a carbonized film can hardly be formed, and a flame retardant resin composition having excellent heat resistance, hydrolytic resistance, mechanical properties, and dielectric properties, low smoke emission, and high extrudability and good appearance of molded articles can be obtained. Thus, the present invention has been accomplished.*

Nakacho et al. may describe a flame retardant composition comprising metal oxides such as iron oxide or copper oxide as component (A) and phosphazene compound as component (B). However, Nakacho et al. does not disclose that a specific phosphazene compound should be selected and/or a specific composition ratio of components (A) and (B) as instantly claimed.

Moreover, the iron oxide or copper oxide is recited as only an example of additives in Nakacho et al., and when zinc oxide and molybdenum oxide, which are disclosed in parallel in

Nakacho et al. (*see column 11 lines 60-61*), were used as component (A), flame retardance, etc., deteriorated as shown in Comparative Examples 5 and 28 of the present specification.

Furthermore, the Examples of Nakacho et al. do not disclose a combination of components (A) and (B) of the present invention as well as the composition ratio of components (A) and (B). Similarly, it is noted that component (A), i.e., specific metal oxides were not used in the Examples of Nakacho et al.

Based on such considerations, it is submitted that the cited Nakacho et al. reference is incapable of either anticipating or rendering obvious any of the instantly pending claims. In this respect, it fails to provide for or otherwise disclose each of the limitations recited in the instantly pending claims, and provides no reason or rationale that would allow one of ordinary skill in the art to arrive at the instant invention as claimed. Any contentions of the USPTO to the contrary must be reconsidered at present.

2.) Distinctions Over Harashina et al. (WO 03/046085)

Harashina et al. may describe a flame retardant resin composition comprising iron oxide as component (A) and phenoxyphosphazene as component (B). However, Harashina et al. does not disclose that a specific phosphazene compound should be selected and/or the composition ratio of components (A) and (B) as instantly claimed. In addition, Harashina et al. discloses iron oxide as only an example of an inorganic filler and recites molybdenum oxide in parallel, which was used in Comparative Example 28 of the present specification.

With regard to the outstanding rejection on claim 2, the USPTO points out that Harashina et al. discloses the flame-retardant resin composition comprising phosphazene and an inorganic filler such as iron oxide at about 0.5 to 60% by weight (*see paragraph 0172*). However, this

percentage means the proportion of the inorganic filler in the flame retardant resin composition, which corresponds to (a)+(b) as recited in claim 15 of the present invention, while "0.1-60 parts by weight of the component (A)" recited in currently amended claim 1 of the present invention means the proportion of (A) in the flame retardant composition which corresponds to (b) recited in claim 15 of the present invention.

Furthermore, the examples of Harashina et al. do not disclose a combination of components (A) and (B) of the present invention. For example, although phosphazene compounds were used in Example 40 and Comparative Example 11 of Harashina et al., these examples did not use component (A) as recited in claim 1 of the present invention. Therefore, it is submitted that Harashina et al. does not disclose the present invention specifically.

Moreover, the ratio of the inorganic filler (A) and phosphazene (B) is calculated as 66.6 parts by weight and 33.3 parts by weight respectively, which is apart form the composition ratio recited in currently amended claim 1 of the present invention.[1] As a result, it is submitted that the flame retardant resin composition of Harashina et al. is inferior in flame retardance.

Attached hereto for the Examiner's review and consideration is a set of Reference Examples regarding Harashina et al. The Examiner is respectfully requested to review the attached Reference Examples at this time, as the reference examples show that flame retardance deteriorates when the composition ratio of (A) and (B) is apart from (outside) the composition ratio recited in currently amended claim 1 of the present invention.

[1] Instantly amended claim 1 recites in part "...0.1-60 parts by weight of the component (A) and 99.9-40 parts by weight of the component (B) in 100 parts by weight of the component (A) and the component (B) in total."

As mentioned above, the flame retardant composition which is excellent in processability, flame retardance, moisture absorption resistance, heat resistance and extrudability when added to resins can be achieved by combining a specific metal oxide (A-1) or a trivalent phosphorous compound (A-2) and a specific phosphazene compound (B) at a specific ratio of these components.

Based on such considerations, it is submitted that the cited Harashina et al. reference is incapable of either anticipating or rendering obvious any of the instantly pending claims. In this respect, it fails to provide for or otherwise disclose each of the limitations recited in the instantly pending claims, and provides no reason or rationale that would allow one of ordinary skill in the art to arrive at the instant invention as claimed. Any contentions of the USPTO to the contrary must be reconsidered at present.

Additional Comments

Based on the above comments, as well as a consideration of the Reference Examples attached hereto, it is submitted that the invention recited in currently amended claim 1 and the remaining claims which ultimately depend on currently amended claim 1 (*i.e., claims 3-24*) are novel and unobvious over the combination of Nakacho et al. and Harashina et al.

Conclusion

Based on the amendments and remarks presented herein, the USPTO is respectfully requested to issue a Notice of Allowance in the matter of the instant application clearly indicating that each of instantly pending claims 1, and 3-24 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey, Reg. No. 32,881 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: January 15, 2009

Respectfully submitted,

By _____

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Attachment: Reference Examples regarding Harashina et al. (WO 03/046085)

Reference examples regarding Harashina et al.

The composition ratio of (A) and (B) in the following reference examples is same as the ratio disclosed in Harashina et al.

The components used in Reference Examples are shown below.

(A－1) Metal oxides

(M－1)

Nickel oxide (NiO ; manufactured by Wako Pure Chemical Industries, Ltd.)

(M－6)

Iron oxide (Fe_2O_3 ; manufactured by Wako Pure Chemical Industries, Ltd.)

(M－12)

Triiron tetroxide (Fe_3O_4 ; manufactured by Wako Pure Chemical Industries, Ltd.)

(M－13)

Cupric oxide (CuO ; manufactured by Wako Pure Chemical Industries, Ltd)

(B) Phosphazene compounds

(FR－1)

Phenoxyphosphazene comprising 93.6% by weight of a phenoxyphosphazene represented by the formula (14) described on page 56 of the present specification in which n is 3, 4.0% by weight of a phenoxyphosphazene represented by the formula (14) in which n is 4, and 2.4% by weight of a phenoxyphosphazene represented by the formula (14) in which n is 5 or more (5% weight reduction temperature: 336°C; 50% weight reduction temperature: 398°C; residue at 500°C: 4.7% by weight; acid value: 0.17; water content: 182 ppm).

(Resins and other components)

(1) Polyphenylene ether resins

(PPE−1)

Poly-2, 6-dimethyl-1, 4-phenylene ether having a number average molecular weight (calculated in terms of polystyrene) of 2600 measured by GPC.

(PPE−5)

Poly-2, 6-dimethyl-1, 4-phenylene ether having a ηsp/c of 0.54 measured in a chloroform solution at 30°C.

(4) Bisphenol A type epoxy resin (Epoxy)

AER250 (manufactured by Asahi Kasei Epoxy Co., Ltd.): Epoxy equivalent: 184-186

(6) Polystyrene (GPPS)

Polystyrene having a ηsp/c of 0.8 measured in a toluene solution.

(8) Hardener

m-Xylene-α, α' -diamine (manufactured by Wako Pure Chemical Industries, Ltd.)

[Reference examples 1 and 2]

The epoxy resin and PPE in the amounts shown in Table 1 were dissolved in an oil bath set at 140°C, and then the phosphazene compound was dissolved in the oil bath set at 130 °C and, the component (A) was mixed. While keeping the temperature, mXDA was added thereto and then the mixture was cast into a mold.

Then, test pieces were molded by hardening each of the compositions for 2 minutes at 100°C and 0 kgf/cm^2, for 2 minutes at 100°C and 10 kgf/cm^2, and for 12 minutes at 100°C and 40 kgf/cm^2 by a hot press. The properties of the test pieces were evaluated to obtain the results as shown in Table 1.

Table 1

		Reference Example 1	Reference Example 2
(A)	NiO/part by weight	8.0	
	CuO/part by weight		8.0
(B)	FR−1/part by weight	4.0	4.0
	FR−3/part by weight	-	-
	PPE−1/part by weight	16.7	16.7
	Epoxy/part by weight	51.0	51.0
	mXDA/part by weight	9.2	9.2
	[UL-94] 2 mm	V out	V out
	Average burning time/sec	18.2	20.3
	Maximum burning time/sec	43.2	39.8
	Smoke emission at burning	×	×
	Moisture absorption resistance	○	○

[Reference examples 3 to 6]

The components were mixed at the ratio as shown in Tables 2 and 3, and the mixture was fed to a twin-screw extruder of 25 mm in screw diameter in which the maximum temperature of the heating cyclinder was set at 200-330°C to carry out melt mixing at a screw revolution speed of 300 rpm, and the resulting strands were cooled and cut to obtain resin composition pellets.

Then, the resulting resin composition pellets were molded by injection molding at 200-330°C to obtain pieces for testing of physical properties, which were subjected to test of physical properties by the test methods described in the present specification to obtain the results of Tables 2 and 3.

Table 2

		Reference Example 3	Reference Example 4
(A)	Fe_3O_4/part by weight	-	15
	Fe_2O_3/part by weight	-	-
	CuO/part by weight	15	-
	$Mg(OH)_2$/part by weight	-	-
(B)	FR-1/part by weight	3	3
	FR-3/part by weight	-	-
PS/part by weight		100	100
[UL-94] 1.6 mm		V out	V out
Smoke emission at burning		×	×
Releasability		○	○
Extrudability		×	×

Table 3

	Reference Example 5	Reference Example 6
(A) Fe_2O_3／part by weight	5.0	5.0
(B) FR−1／part by weight	1.0	2.5
PPE−5／part by weight	36.0	36.0
HIPS／part by weight	37.0	37.0
GPPS／part by weight	12.0	12.0
[UL−94] 1/16 inch		
Average burning time／sec	15.2	13.4
Maximum burning time／sec	28.6	25.5
Smoke emission at burning	×	×
DTUL／°C	119.0	116.5
Dielectric characteristics [1 GHz]		
Relative dielectric constant	2.65	2.64
MD	○	○